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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,562	11/06/2001	Kunio Doi	205755US20PCT	1158

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EXAMINER

CHOOBIN, BARRY

ART UNIT PAPER NUMBER

2625

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,562

Applicant(s)

DOI ET AL.

Examiner

Barry Choobin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-174 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-58 and 146-174 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 59-61 is/are rejected.
- 7) ☒ Claim(s) 2-29,62-145 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/22/2005 have been fully considered but they are not persuasive.

As to claim 1, applicant argues that prior art fails to teach or fairly suggest the step of producing a second image, which is a mirror of the first image, wherein the first image is an image of a chest.

The Examiner disagrees. Yamada discloses at column 13, lines 11-20 a mirroring image wherein an image produced by mirroring technique. Although, the image is not a chest image, but as recited in previous office action it would have been obvious to a person of ordinary skill in the art to modify Kano et al with the technique of Yamada in order to increase the precision by simple operation having no adverse effect on diagnosis made by doctors.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (US 5,359,513) in view of Yamada et al (US 5,235,510).

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As to claim 1, Kano et al disclose a method and system for detection of interval change in temporally sequential chest images comprising; the steps of obtaining a digital first and second image of chest (column 5, lines 60-65 and fig.1c, step 1Q);

Performing image warping on one of the first and second image to produce a warped image which is registered to the other of said first and second images (column 5, lines 1-23, fig.1b, step 44-46); and subtracting the warped image from the other image to generate a subtraction image (column 5, lines 15-25 and step 50, wherein subtraction of warped image and unwrapped image is performed).

Kano et al does not expressly disclose producing a second image which is a mirror image of the first image.

However, Yamada et al disclose a computer aided diagnostic system comprising the step of producing a second image, which is mirror image of the first image (column 13, lines 20-30 and fig.32).

Kano et al and Yamada et al are combinable because they are from same field of endeavor of analyzing digital medical images.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the step of producing a mirror image as taught by Yamada et al in the system of Kano et al in order to output computer aided diagnosis data with a high precision by a simple operation having no adverse effect on diagnosis made by doctors.

The suggestion/motivation for doing so would have been to increase the precision of outputting computer aided diagnosis data.

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Therefore, it would have been obvious to combine Yamada et al with Kano et al to obtain the invention as specified in claim 1.

As to claim 2, Kano et al disclose displaying the subtraction image (fig.2a-2d).

Claims 59-61 are apparatus and computer program claims corresponding to claims 1-2 above and are similarly analyzed and rejected.

Allowable Subject Matter

4. Claims 3-29, 62-145 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 30-58, 146-174 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: prior art fails to teach or fairly suggest performing lateral inclination correction on the original image to generate the first image, determining average horizontal locations of the left and right ribcage edges at plural vertical locations; removing from consideration false positive locations having an extracted feature which bears a predetermined relationship with respect to a predetermined threshold; determining average horizontal locations of the left and right ribcage edges at plural vertical locations; and shifting the rotated image to produce a lateral inclination corrected second image with the midline centered in said lateral inclination corrected image.

Conclusion

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6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 571-272-7447. The examiner can normally be reached on M-F 7:30 AM to 18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Barry Choobin
7/29/05


DANIEL MIRIAM
PRIMARY EXAMINER